

# Work Order ID 81939

**\*81939\***

Page 1

March-21-12 9:51:51 AM

Item ID: D4545-043      Accept      **\*N900040100\***      Setup Start **\*NS1\***  
Revision ID:      Stop **\*NS2\***  
Item Name: Retainer, Inner, LH (Side)  
Start Date: 21/03/2012      Start Qty: 2.00      **\*2\***      Cust Item ID:  
Required Date: 04/04/2012      Req'd Qty: 2.00      **\*2\***      Customer:  
Reference:

Approvals:      Process Plan: MLJ      Date: 12/03/21      Tooling:      Date:      Run Start **\*NR1\***  
QC:      Date:      SPC (Y/N):      Date:      Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4545	B

100	Pick Kit	0.00							
<b>*100*</b>									
Packaging	Memo	0.00							
Packaging									

110		0.00							
<b>*110*</b>									
Small Fab	Memo	0.00							
Small Fab	<p>86 12/03/21</p> <p>1- ASSEMBLE AND BEND TABS AS PER DWG</p> <p>2- TRANSFER DRILL HOLES AS PER DWG.</p> <p>3- DISASSEMBLE AND DEBURR</p> <p>4- DIMPLE HOLES AS PER DWG</p>								

②

②

FF

12-03-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 81939

**\*81939\***

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March-21-12 9:51:51 AM

Item ID: D4545-043  
Revision ID:  
Item Name: Retainer, Inner, LH (Side)

Accept

**\*N9000040100\***

Setup Start **\*NS1\***  
Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 2.00 **\*2\***  
Required Date: 04/04/2012 Req'd Qty: 2.00 **\*2\***

Cust Item ID:  
Customer:




Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC5- Inspect part completeness to step on W/O	0.00							
<b>*120*</b>									
QC	Memo	0.00							
Quality Control									
130	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*130*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
140	QC7-Inspect Chemical Conversion Coat	0.00							
<b>*140*</b>									
QC	Memo	0.00							
Quality Control									

PTO

W/O: 81539		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
1203-22	145 146	Install nutplates before paint		1203-22	2	 G. J. J.	 1203.22

Part No: D 4545-043 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 81939

March-21-12 9:51:51 AM

**\*81939\***

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Item ID: D4545-043 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Retainer, Inner, LH (Side)  
 Start Date: 21/03/2012 Start Qty: 2.00 **\*2\*** Cust Item ID:  
 Required Date: 04/04/2012 Req'd Qty: 2.00 **\*2\*** Customer:  
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start **\*NR1\***  
 QC: Date: SPC (Y/N): Date: Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 <b>*150*</b> Powdercoat Powder Coating	Black Sandtex(Ref:4.3.5.7) per QSI005 4.3  Memo START TIME: 10h35 OVEN TEMPERATURE: 320°F FINISH TIME: 11h05	0.00  0.00				2	0	(2)	12/03/23
160 <b>*160*</b> QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00				2		BL 12-3-23	
170 <b>*170*</b> Small Fab Small Fab	INSTALL NUT PLATES AS PER DWG  Memo	0.00  0.00				(2)	FF	12-03-23	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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March-21-12 9:51:51 AM

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 Start Date: 21/03/2012      Start Qty: 2.00      **\*2\***      Cust Item ID:  
 Required Date: 04/04/2012      Req'd Qty: 2.00      **\*2\***      Customer:  
 Reference:

Approvals:      Process Plan:      Date:      Tooling:      Date:      Run      Start      **\*NR1\***  
 QC:      Date:      SPC (Y/N):      Date:      Stop      **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 <b>*180*</b> QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00							
190 <b>*190*</b> Packaging Packaging	Identify as per dwg & Stock Location: <u>442</u>  Memo	0.00  0.00							
200 <b>*200*</b> QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							

SP 12/03/23

12/3/23 SP (2)

MLJ 12/03/26  
 MF  
 12-03-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries



# Picklist Print

March-21-12 9:51:55 AM

Work Order ID: 81939

\*81939\*

Parent Item: D4545-043

\*D4545-043\*

Parent Item Name: Retainer, Inner, LH (Side)

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 12.01.13 new issue DD verf:JLM  
12.02.27 AS PER DWG REV.B DD VERF:EC

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4541-3 *D4541-3* Bracket		Manufactured	No			100	Each	2.0000	1	2			
									**			(2) FF 12-03-23	
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					FG	2	B81262			2			
					78276	2							
D4542-3 *D4542-3* Retainer, Inner		Manufactured	No			100	Each	2.0000	1	2			
									**			(2) FF 12-03-23	
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					FG	2	B81267			2			
					78280	2							
MS20426AD3-4 *MS20426AD3-4* RIVET		Purchased	No			170	Each	3,914.000	28	56			
									**			(2) FF 12-03-23	
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					ST316	3914							
					104374	1006				56			
					110398	2908							
MS21059L3K *MS21059L3K* Nutplate		Purchased	No			170	Each	0.0000	14	28			
									**			(2) FF 12-03-23	
										28			

M121114

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

ITEM	QTY -041	QTY -042	QTY -043	QTY -044	QTY -045	QTY -046	QTY -047	QTY -048	PART NUMBER	DESCRIPTION
	X								D4545-041	RETAINER, LH INNER (LOWER)
		X							D4545-042	RETAINER, RH INNER (LOWER)
			X						D4545-043	RETAINER, LH INNER (SIDE)
				X					D4545-044	RETAINER, RH INNER (SIDE)
					X				D4545-045	RETAINER, LH INNER (TOP CORNER)
						X			D4545-046	RETAINER, RH INNER (TOP CORNER)
							X		D4545-047	RETAINER, LH INNER (TOP)
								X	D4545-048	RETAINER, RH INNER (TOP)
1	1								D4541-1	BRACKET
2		1							D4541-2	BRACKET
3			1	1					D4541-3	BRACKET
4					1	1			D4541-5	BRACKET
5							1	1	D4541-7	BRACKET
6	1								D4542-1	RETAINER
7		1							D4542-2	RETAINER
8			1	1					D4542-3	RETAINER
9					1	1			D4542-5	RETAINER
10							1	1	D4542-7	RETAINER
11	40	38	28	28	12	12	16	16	MS20426AD3-4	RIVET
12	19	18	14	14	6	6	8	8	MS21059L3K	NUTPLATE
13	1	1							MS21061L3K	NUTPLATE

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: PRIOR TO ASSEMBLY, POWDER COAT D4541-X & D4542-X WITH BLACK SANDTEX (4.3.5.7) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N & B/N PER DART QSI 044 6.1
- 7) WEIGHT: -041/-042 = 0.38 lbs, -043/-044 = 0.27 lbs,  
-045/-046 = 0.11 lbs, -047/-048 = 0.15 lbs
- 8) BEND INDIVIDUAL TABS ON D4541-X BRACKETS TO CORRESPONDING "A#" (A1, A2, ETC.,) VALUE

B	ADD FINISH (ZN A8-1)	CP	12.02.01
A	NEW ISSUE	CP	12.01.09
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.02.01		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D4545	REV. B SHEET 1 OF 9
TITLE RETAINER, INNER	SCALE NTS

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NO. ~~80550~~ M.C.J  
81939 12/03/21

RELEASED  
2012-02-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

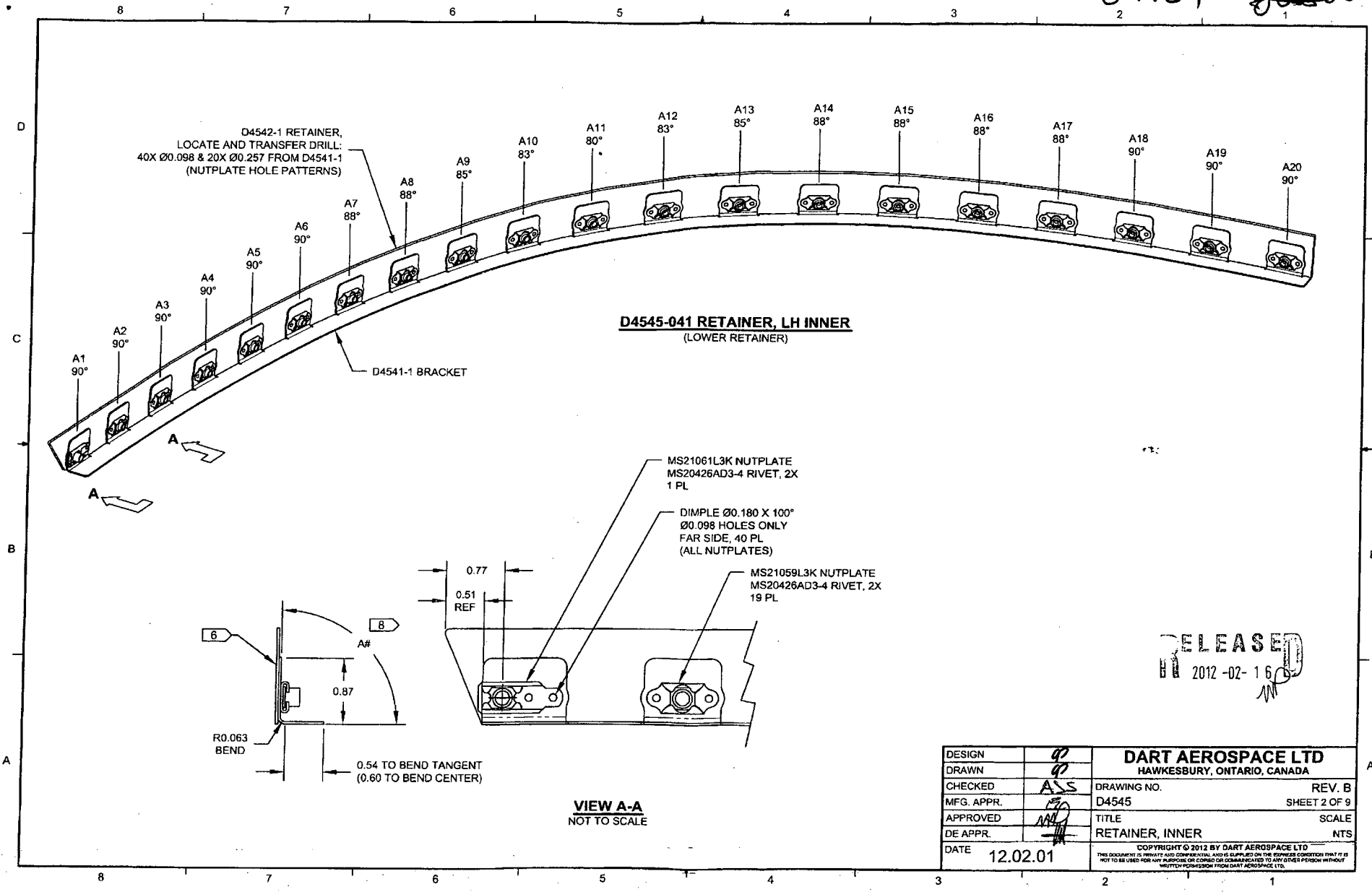
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

81939

~~80550~~



RELEASED  
2012-02-16

DESIGN	92	<b>DART AEROSPACE LTD</b>	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. B
MFG. APPR.		D4545	SHEET 2 OF 9
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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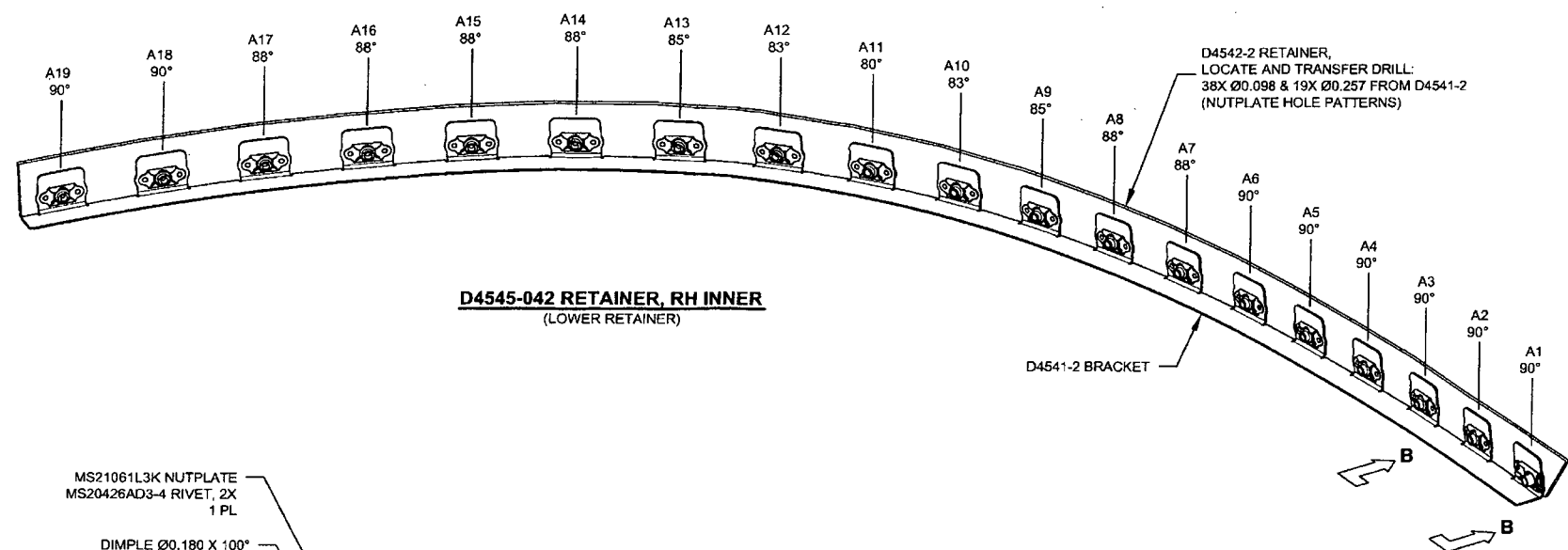
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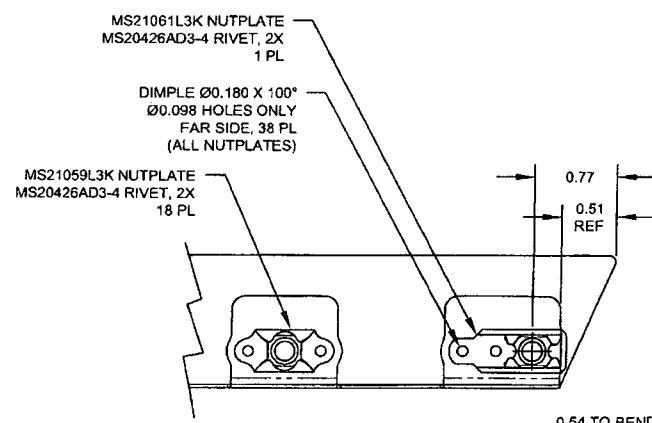
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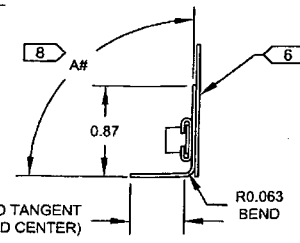
~~81939~~



**D4545-042 RETAINER, RH INNER**  
(LOWER RETAINER)



**VIEW B-B**  
NOT TO SCALE



RELEASED  
2012-02-16

DESIGN	90	<b>DART AEROSPACE LTD</b>	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. B
MFG. APPR.	90	D4545	SHEET 3 OF 9
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DE APPR.	90	RETAINER, INNER	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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81939

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D4542-3 RETAINER,  
LOCATE AND TRANSFER DRILL:  
28X Ø0.098 & 14X Ø0.257 FROM D4541-3

**D4545-043 RETAINER, LH INNER**  
(SIDE RETAINER)

D4541-3 BRACKET

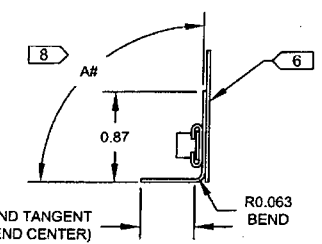
MS21059L3K NUTPLATE  
MS20426A03-4 RIVET, 2X  
14 PL

DIMPLE Ø0.180 X 100°  
Ø0.098 HOLES ONLY  
FAR SIDE, 28 PL

**VIEW C-C**  
NOT TO SCALE

0.54 TO BEND TANGENT  
(0.60 TO BEND CENTER)

RELEASED  
2012-02-16  
MP



DESIGN	92	<b>DART AEROSPACE LTD</b>	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. B
MFG. APPR.	5	D4545	SHEET 4 OF 8
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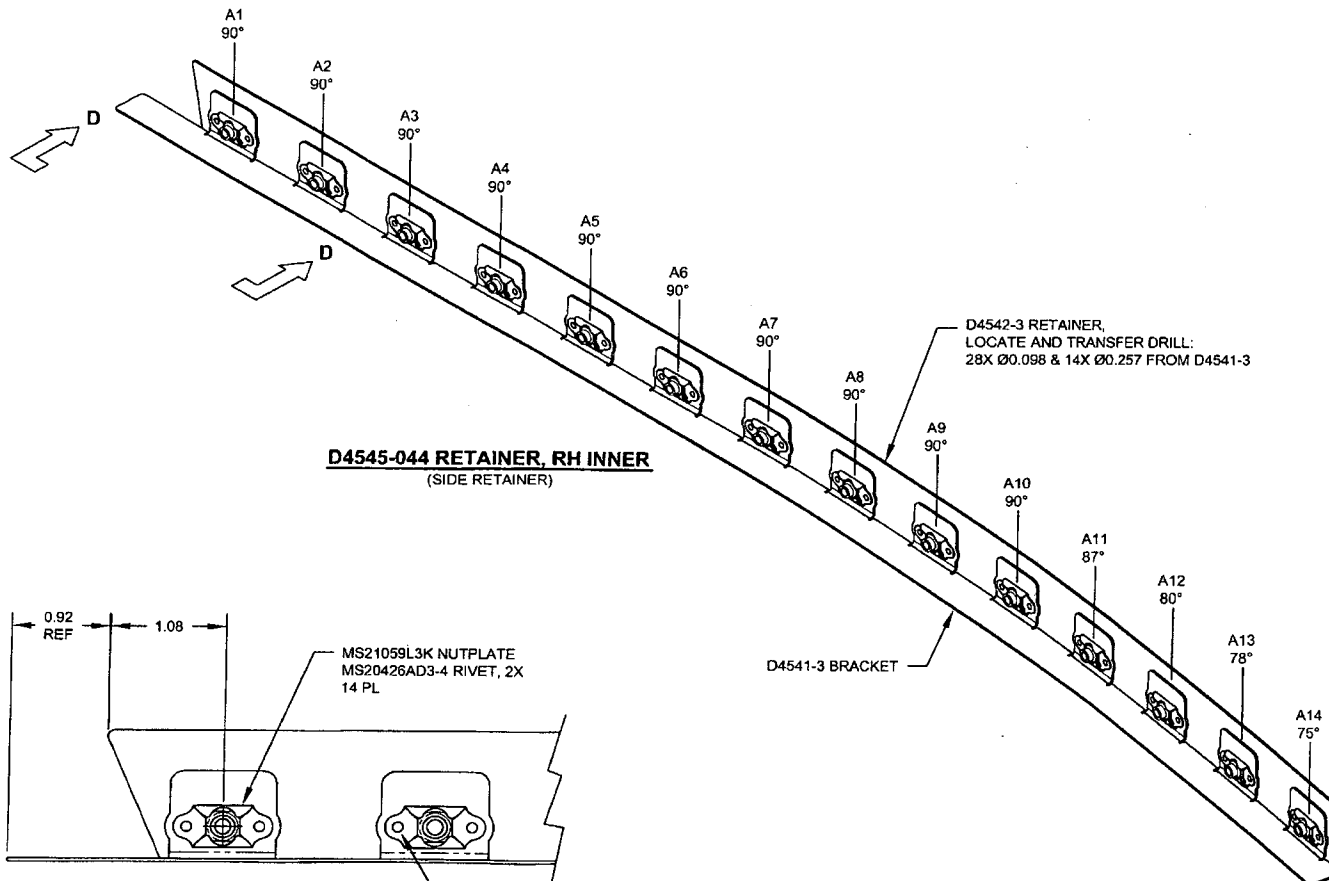
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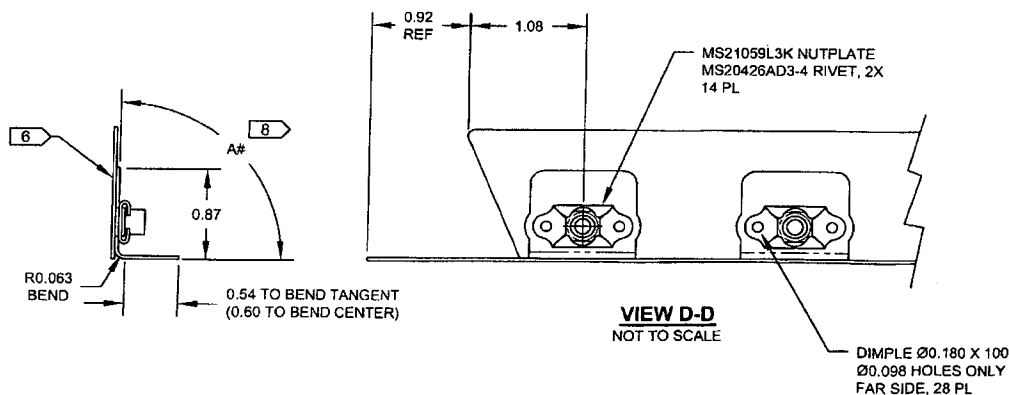
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**NOTE:** Date & initial all entries

81939 ~~80500~~



**D4545-044 RETAINER, RH INNER**  
(SIDE RETAINER)



RELEASED  
2012-02-16

DESIGN	90	<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. B
MFG. APPR.		D4545	SHEET 5 OF 6
APPROVED	ED	TITLE	SCALE
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W/O:		WORK ORDER CHANGES					
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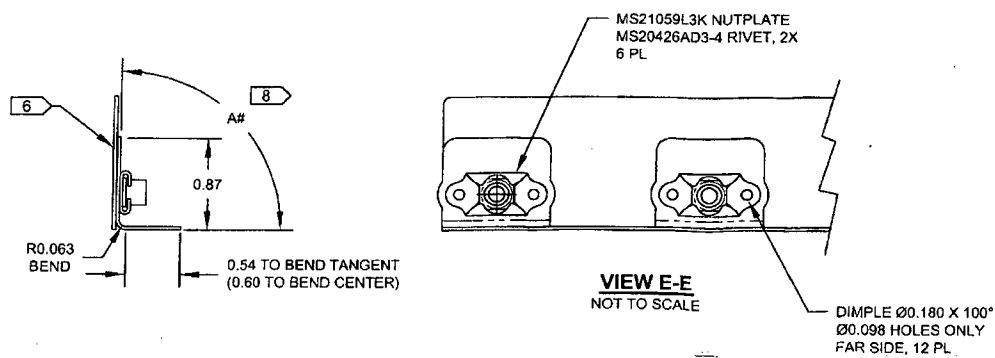
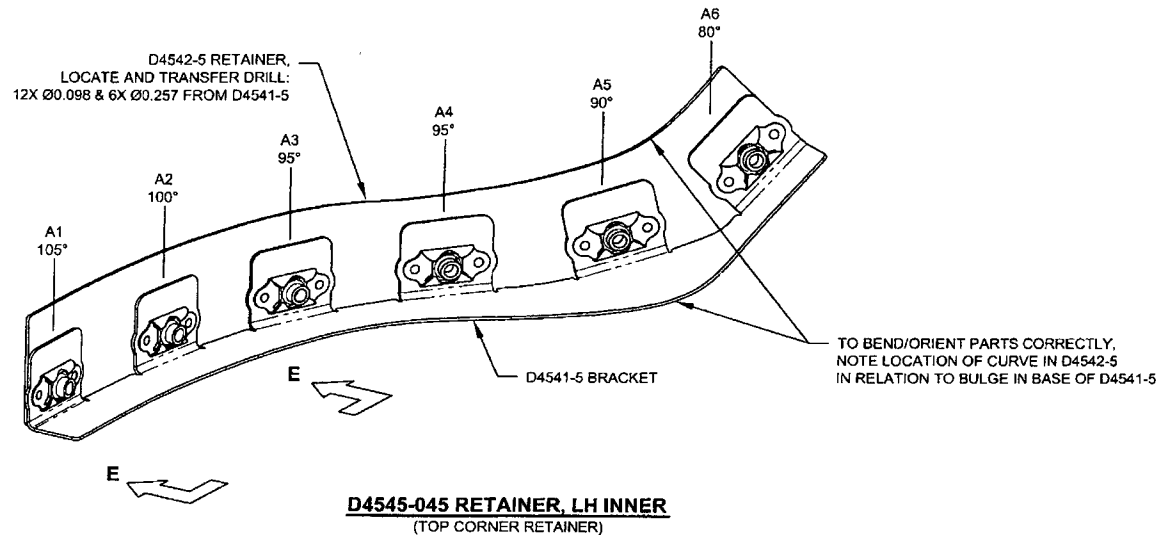
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2012-02-16

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CHECKED	ASS	DRAWING NO.	REV. B
MFG. APPR.	FO	D4545	SHEET 6 OF 9
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

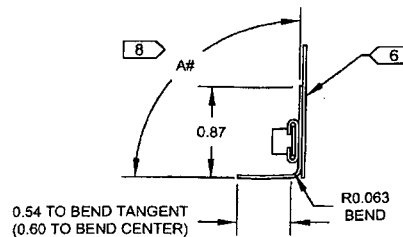
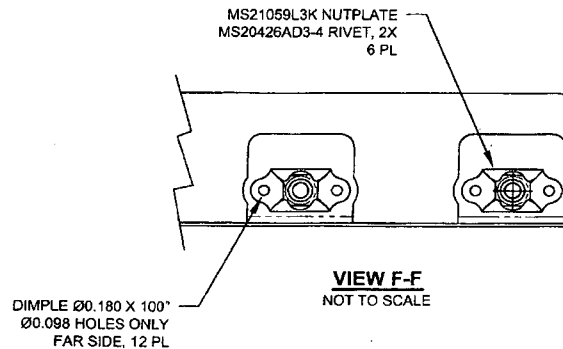
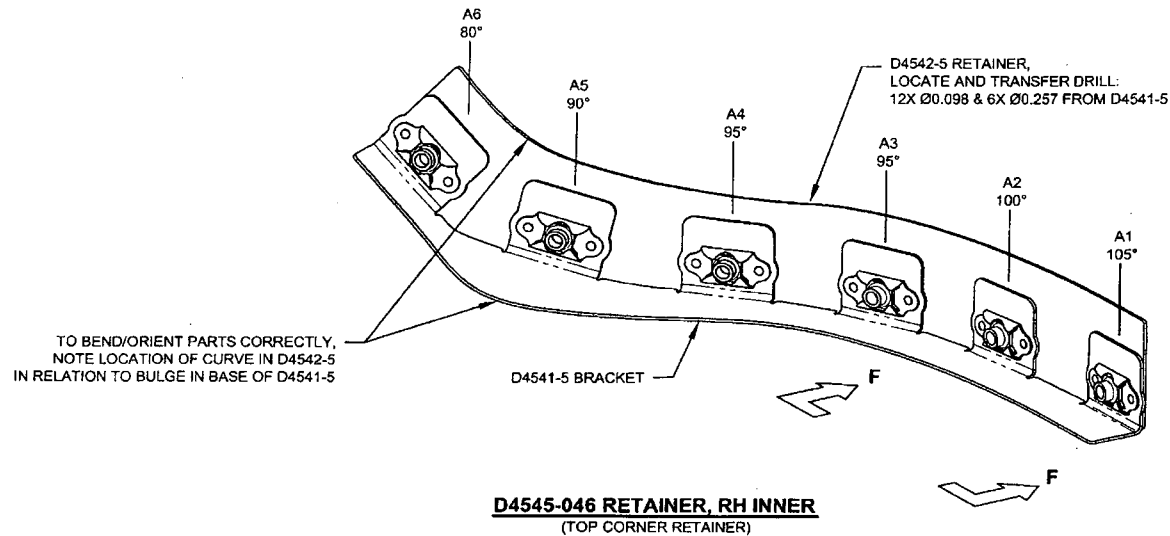
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

81939

~~81939~~



RELEASED  
2012-02-16  
WFO

DESIGN	9	<b>DART AEROSPACE LTD</b>	
DRAWN	9	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO. D4545	REV. B
MFG. APPR.		SHEET 7 OF 9	
APPROVED		TITLE	SCALE
DE APPR.		RETAINER, INNER	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

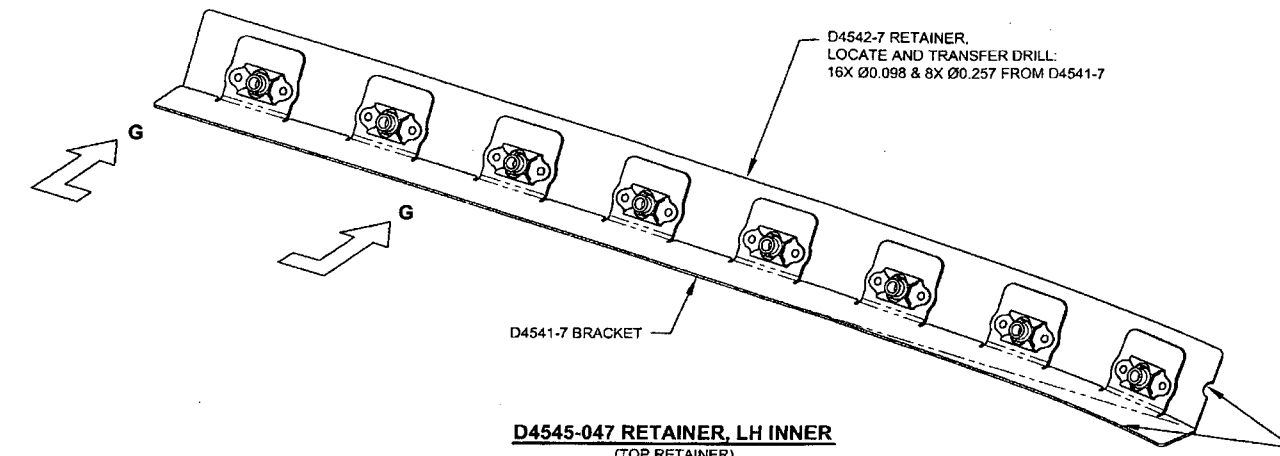
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



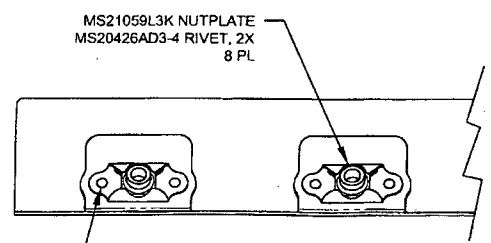
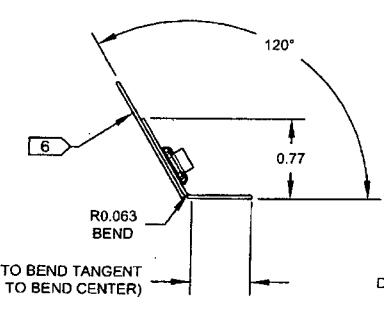
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**D4545-047 RETAINER, LH INNER**  
(TOP RETAINER)

TO BEND/ORIENT PARTS CORRECTLY,  
NOTE LOCATION OF TOOLING MARK IN D4542-7  
IN RELATION TO CURVE IN BASE OF D4541-7



DIMPLE Ø0.180 X 100°  
Ø0.098 HOLES ONLY  
FAR SIDE, 16 PL

**VIEW G-G**  
NOT TO SCALE

RELEASE  
2012-02-16

DESIGN	92	<b>DART AEROSPACE LTD</b>	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV. B
MFG. APPR.	13	D4545	SHEET 8 OF 9
APPROVED	13	TITLE	SCALE
DE APPR.	13	RETAINER, INNER	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

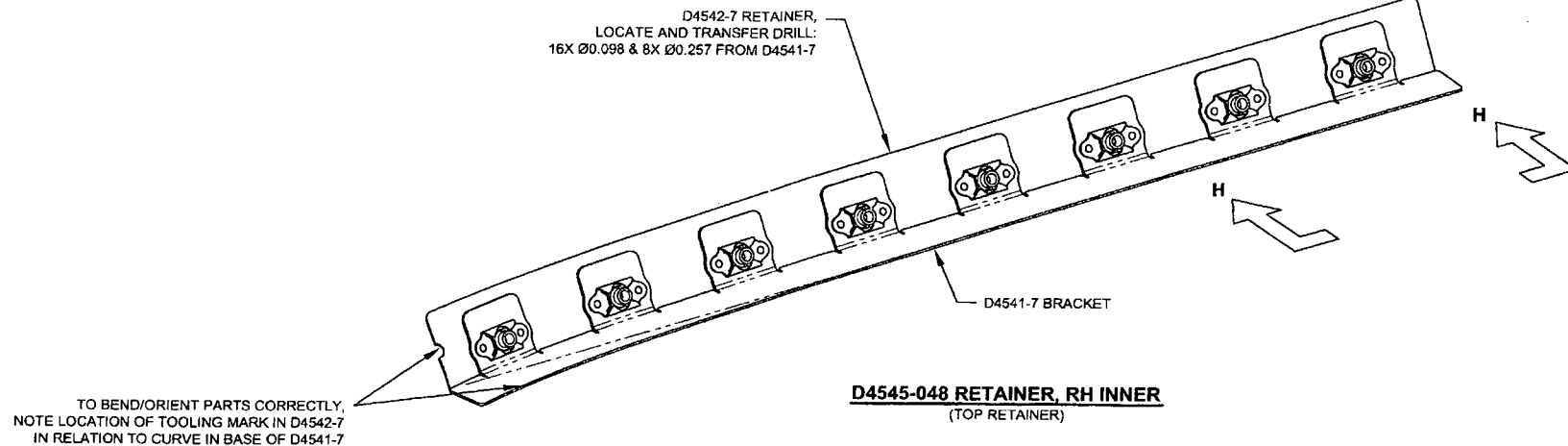
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

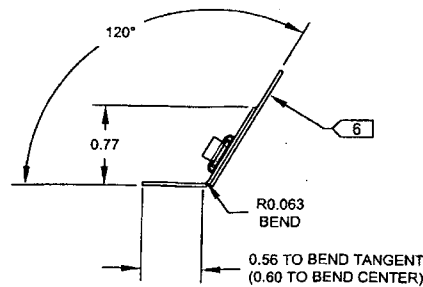
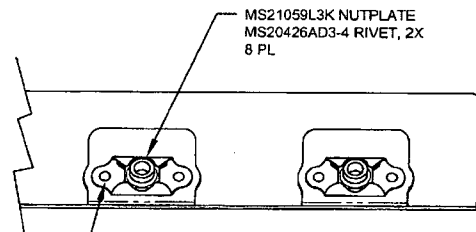
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

81939 ~~80830~~



**D4545-048 RETAINER, RH INNER**  
(TOP RETAINER)



DIMPLE Ø0.180 X 100°  
Ø0.098 HOLES ONLY  
FAR SIDE, 16 PL

**VIEW H-H**  
NOT TO SCALE

RELEASED  
2012-02-16

DESIGN	90	<b>DART AEROSPACE LTD</b>	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO. D4545	REV. B
MFG. APPR.			SHEET 9 OF 9
APPROVED		TITLE	SCALE
DE APPR.		RETAINER, INNER	NTS
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W/O:		WORK ORDER CHANGES /					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries